Archives of
TOXICOLOGY

Volume 47 1981

Edited on behalf of the Deutsche Pharmakologische Gesellschaft
and the Deutsche Gesellschaft für Rechtsmedizin

Official organ of the European Society of Toxicology

Editorial Board

Editor in Chief

H. Frohberg, Darmstadt

Associate Editors

W. N. Aldridge, Carshalton
H. Greim, Neuherberg (München)
D. Henschler, Würzburg
G. A. Neuhaus, Berlin
Gg. Schmidt, Heidelberg
G. Zbinden, Schwerzenbach (Zürich)

Editors

J. Ashby, Macclesfield
H. Bartsch, Lyon
C. L. Berry, London
J. W. Bridges, Guildford
A. L. de Weck, Bern
H. Edery, Ness Ziona
L. Golberg, Research Triangle Park, N.C.
B. Holmstedt, Stockholm
K. S. Larsson, Stockholm
R. A. A. Maes, Utrecht
D. Neubert, Berlin
S. Okonek, Mainz
F. Sakai, Tokyo
G. Schmidt, Göttingen
E. Thorpe, Sittingbourne
H. Uehleke, Berlin
B. M. Wagner, Summit, N.J.
M. Webb, Carshalton
J. H. Weisburger, Valhalla, N.Y.

Springer International

Archives of Toxicology

Founded in 1930 by H. Wieland with the backing of the Deutsche Pharmakologische Gesellschaft. Vols 1–14 published under the title "Sammlung von Vergiftungsfällen", Vols 15–27 published under the title "Archiv für Toxikologie" and edited as follows: Vols 1–4 by H. Führer, Vols 5–15/2 by B. Behrens, Vols 15/3–16/1 by B. Behrens and K. Wagner, Vols 16/2–22 incl. by B. Behrens, H. Oettel and K. Wagner. *Publisher:* F. C. W. Vogel, Leipzig-Berlin; from Vol 11 (1941) Springer, Berlin.

The exclusive copyright for all languages and countries, including the right for photomechanical and any other reproductions, also in microform, is transferred to the publisher.

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Authors of this journal can benefit from library and photocopy fees collected by VG WORT if certain conditions are met. If an author lives in the Federal Republic of Germany or in West Berlin it is recommended that he contacts Verwertungsgesellschaft WORT, Abteilung Wissenschaft, Goethestrasse 49, D-8000 München 2, Federal Republic of Germany for detailed information.

Die in der Zeitschrift veröffentlichten Beiträge sind urheberrechtlich geschützt. Alle Rechte, insbesondere das der Übersetzung in fremde Sprachen, vorbehalten. Kein Teil dieser Zeitschrift darf ohne schriftliche Genehmigung des Verlages in irgendeiner Form – durch Fotokopie, Mikrofilm oder andere Verfahren – reproduziert oder in eine von Maschinen, insbesondere von Datenverarbeitungsanlagen, verwendbare Sprache übertragen werden.

Auch die Rechte der Wiedergabe durch Vortrag, Funk- und Fernsehsendung, im Magnettonverfahren oder ähnlichem Wege bleiben vorbehalten.

Fotokopien für den persönlichen und sonstigen eigenen Gebrauch dürfen nur von einzelnen Beiträgen oder Teilen daraus als Einzelkopien hergestellt werden. Jede im Bereich eines gewerblichen Unternehmens hergestellte oder benutzte Kopie dient gewerblichen Zwecken gem. § 54 (2) UrhG und verpflichtet zur Gebührenzahlung an die VG WORT, Abteilung Wissenschaft, Goethestrasse 49, D-8000 München 2, von der die einzelnen Zahlungsmodalitäten zu erfragen sind.

Autoren dieser Zeitschrift können unter gewissen Voraussetzungen in die Individualausschüttung von Mitteln aus der Bibliothektantieme und dem Fotokopieraufkommen mit einbezogen werden.

Genaue Information erteilt die Verwertungsgesellschaft WORT, Abteilung Wissenschaft, Goethestrasse 49, D-8000 München 2.

Die Wiedergabe von Gebrauchsnamen, Handelsnamen, Warenbezeichnungen usw. in dieser Zeitschrift berechtigt auch ohne besondere Kennzeichnung nicht zu der Annahme, daß solche Namen im Sinne der Warenzeichen- und Markenschutz-Gesetzgebung als frei zu betrachten wären und daher von jedermann benutzt werden dürften.

Springer-Verlag Berlin Heidelberg New York

Printed in Germany by Carl Ritter-GmbH & Co.KG., Wiesbaden

© Springer-Verlag Berlin Heidelberg 1981

Contents

Ahlborg, U. G., see Thunberg, T., et al. 245
Aldridge, W. N., see Verschoyle, R. D. 75

Baranowska-Dutkiewicz, B.: Absorption of Hexavalent Chromium by Skin in Man 47
Benitz, K. F., see Martino, L. J., et al. 155
Bolt, H. M., Laib, R. J., Klein, K.-P.: Formation of Pre-Neoplastic Hepatocellular Foci by Vinyl Fluoride in Newborn Rats 71
Bolt, H. M., see Filser, J. G. 279
Bolt, H. M., see Hallier, E., et al. 293

Castro, J. A., see Diaz Gomez, M. I., et al. 159
Chandra, S. V., see Shukla, G. S. 191
Chmielnicka, J., Szymańska, J. A., Snieć, J.: Distribution of Tin in the Rat and Disturbances in the Metabolism of Zinc and Copper Due to Repeated Exposure to $SnCl_2$ 263

Decken, A. von der, see Näslund, B. 169
Delbressine, L. P. C., see Doorn, R. van, et al. 51
Diaz Gomez, M. I., Godoy, H. M., Castro, J. A.: Further Studies on Dimethylnitrosamine Metabolism, Activation and Its Ability to Cause Liver Injury 159
Dierickx, P. J.: Urinary Gamma-Glutamyl Transferase as an Indicator of Acute Nephrotoxicity in Rats 209
Doorn, R. van, Delbressine, L. P. C., Leijdekkers, Ch.-M., Vertin, P. G., Henderson, P. Th.: Identification and Determination of 2-Thiothiazolidine-4-Carboxylic Acid in Urine of Workers Exposed to Carbon Disulfide 51
Druml, W., see Lenz, K., et al. 241

Eder, A., see Lenz, K., et al. 241
Eyer, P., see Jansco, P., et al. 39

Filser, J. G., Bolt, H. M.: Inhalation Pharmacokinetics Based on Gas Uptake Studies. I. Improvement of Kinetic Models 279
Filser, J. G., see Hallier, E., et al. 293
Flood, P. R., see Syversen, T. L. M., et al. 101
Flury-Roversi, M., see Zbinden, G. 77
Friedberg, K. D., see Schlick, E. 197

Gaszner, A., see Lenz, K., et al. 241
Geelen, J. A. G., see Joosten, H. F. P., et al. 25
Ghai, G. L., see Zaldívar, R., et al. 145
Godoy, H. M., see Diaz Gomez, M. I., et al. 159
Gut, I., Hátle, K., Žižková, L.: Effect of Phenobarbital Pretreatment on Benzene Biotransformation in the Rat. II. 9,000 g Supernatant and Isolated Perfused Liver Versus Living Rat 13

Håkansson, H., see Thunberg, T., et al. 245
Hallier, E., Filser, J. G., Bolt, H. M.: Inhalation Pharmacokinetics Based on Gas Uptake Studies. II. Pharmacokinetics of Acetone in Rats 293
Hashimoto, K., Sakamoto, J., Tanii, H.: Neurotoxicity of Acrylamide and Related Compounds and Their Effects on Male Gonads in Mice 179
Hátle, K., see Gut, I., et al. 13
Heijst, A. N. P. van, see Sangster, B., et al. 269
Henderson, P. Th., see Doorn, R. van, et al. 51
Hirakawa, E., see Omata, S., et al. 113
Hoekstra, A., see Joosten, H. F. P., et al. 25
Hruby, K., see Lenz, K., et al. 241

Jansco, P., Szinicz, L., Eyer, P.: Biotransformation of 4-Dimethylaminophenol in Man 39
Joosten, H. F. P., Hoekstra, A., Geelen, J. A. G., Yih, T. D.: Cysts in Rabbit Foetal Brains. Malformations or Artefacts? 25

Kersten, L.: Toxicity and Renal Elimination of Lithium in Rats of Different Ages 135
Kirsch, D. M., Weger, N.: Effects of the Bispyridinium Compounds HGG12, HGG42, and Obidoxime on Synaptic Transmission and NAD(P)H-Fluorescence in the Superior Cervical Ganglion of the Rat in vitro 217
Klein, A. W., Koch, T. R.: Lead Accumulations in Brain, Blood, and Liver After Low Dosing of Neonatal Rats 257
Klein, K.-P., see Bolt, H. M., et al. 71
Kleinberger, G., see Lenz, K., et al. 241
Koch, T. R., see Klein, A. W. 257
Kostial, K., see Rabar, I. 63
Krantz, C., see Thunberg, T., et al. 245

Laib, R. J., see Bolt, H. M., et al. 71
Leijdekkers, Ch.-M., see Doorn, R. van, et al. 51
Lenz, K., Hruby, K., Druml, W., Eder, A., Gaszner, A., Kleinberger, G., Pichler, M., Weiser, M.: 2,3-Dimercaptosuccinic Acid in Human Arsenic Poisoning 241

Martino, L. J., Wilson-Martino, N. A., Benitz, K. F.: The Presence of Intranuclear Lipid Inclusions in Hepatocytes of Mice After Chronic Ingestion of Polybrominated Biphenyl 155
Martino, L. J., see Salo, D. F., et al. 305
Monier, M., see Thunberg, T., et al. 245

Näslund, B., Decken, A. von der: Chain Length Heterogeneity of Nucleosomal DNA in Mouse Liver After Dimethylnitrosamine Administration 169
Neumann, H., see Roggendorf, W., et al. 247
Nilsen, O. G., Toftgård, R.: Effects of Polychlorinated Terphenyls and Paraffins on Rat Liver Microsomal Cytochrome P-450 and in vitro Metabolic Activities 1

Ogata, M., see Tomokuni, K. 67
Omata, S., Tsubaki, H., Sakimura, K., Sato, M., Yoshimura, R., Hirakawa, E., Sugano, H.: Stimulation of Protein and RNA Synthesis by Methylmercury Chloride in the Liver of Intact and Adrenalectomized Rats 113
Ottosson, A.: Late Aortic Rupture After Lye Ingestion 59

Pichler, M., see Lenz, K., et al. 241
Prunés, L., see Zaldívar, R., et al. 145

Rabar, I., Kostial, K.: Bioavailability of Cadmium in Rats FED Various Diets 63
Richter, E., Schäfer, S. G.: Intestinal Excretion of Hexachlorobenzene 233
Roggendorf, W., Neumann, H., Thron, H. L., Schneider, H., Sarasa-Corral, J. L.: Histological Examination of the Rat After Long-Term Exposure to Subtoxic Automotive Exhaust Gas 247

Sakamoto, J., see Hashimoto, K., et al. 179
Sakimura, K., see Omata, S., et al. 113
Salo, D. F., Martino, L. J., Tucci, S. M.: Sister Chromatid Exchange Frequency in Mouse Embryo Chromosomes Following in utero Exposure to Beta-aminopropionitrile 305
Sangster, B., Heijst, A. N. P. van, Sixma, J. J.: The Influence of Haemoperfusion on Haemostasis and Cellular Constituents of the Blood in the Treatment of Intoxications. A Comparative Study of Three Types of Columns (Haemocol, Amberlite, XAD-4, Gambro Adsorba 300 C) 269
Sarasa-Corral, J. L., see Roggendorf, W., et al. 247
Sato, M., Sugano, H., Takizawa, Y.: Effects of Methylmercury on Zinc-Thionein Levels of Rat Liver 125
Sato, M., see Omata, S., et al. 113
Schäfer, S. G., see Richter, E. 233
Schlick, E., Friedberg, K. D.: The Influence of Low Lead Doses on the Reticulo-endothelial System and Leucocytes of Mice 197
Schneider, H., see Roggendorf, W., et al. 247
Shukla, G. S., Chandra, S. V.: Striatal Dopamine Turnover and L-dopa Treatment After Short-term Exposure of Rats to Manganese 191

Sixma, J. J., see Sangster, B., et al. 269
Snieć, J., see Chmielnicka, J., et al. 263
Sugano, H., see Omata, S., et al. 113
Sugano, H., see Sato, M., et al. 125
Syversen, T. L. M., Totland, G., Flood, P. R.: Early Morphological Changes in Rat Cerebellum Caused by a Single Dose of Methylmercury 101
Szinicz, L., see Jansco, P., et al. 39
Szymańska, J. A., see Chmielnicka, J., et al. 263
Takizawa, Y., see Sato, M., et al. 125
Tanii, H., see Hashimoto, K., et al. 179
Thron, H. L., see Roggendorf, W., et al. 247
Thunberg, T., Ahlborg, U. G., Håkansson, H., Krantz, C., Monier, M.: Effect of 2,3,7,8-Tetrachlorodibenzo-p-dioxin on the Hepatic Storage of Retinol in Rats with Different Dietary Supplies of Vitamin A (Retinol) (1980) **45**: 273–285 245
Toftgård, R., see Nilsen, O. G. 1
Tomokuni, K., Ogata, M.: Relationship Between Lead Concentration in Blood and the Activities of Erythrocyte Pyrimidine 5′-Nucleotidase and Delta-Aminoevulinate Dehydratase in the Mice Exposed to Lead 67
Totland, G., see Syversen, T. L. M., et al. 101
Tsubaki, H., see Omata, S., et al. 113
Tucci, S. M., see Salo, D. F., et al. 305
Verschoyle, R. D., Aldridge, W. N.: Structure-Activity Relationships of Some Pyrethroids in Rats 75
Vertin, P. G., see Doorn, R. van, et al. 51
Weger, N., see Kirsch, D. M. 217
Weiser, M., see Lenz, K., et al. 241
Wilson-Martino, N. A., see Martino, L. J., et al. 155
Yih, T. D., see Joosten, H. F. P., et al. 25
Yoshimura, R., see Omata, S., et al. 113
Zaldívar, R., Prunés, L., Ghai, G. L.: Arsenic Dose in Patients with Cutaneous Carcinomata and Hepatic Haemangio-Endothelioma After Environmental and Occupational Exposure 145
Zbinden, G., Flury-Roversi, M.: Significance of the LD_{50}-Test for the Toxicological Evaluation of Chemical Substances 77
Žižková, L., see Gut, I., et al. 13

Subject Index

Acetone 293
Acrylamide and analogues 179
Action potential 217
Age dependence 135
Aminoglycoside antibiotics 209
Arsenic 145, 241
Artefact 25
Atropine 217
Automotive exhaust gas 247

Benzene biotransformation 13
Beta-aminopropionitrile (BAPN) 305
Bichromate, potassium 209
Bioavailability 63
Bispyridinium oximes 217
Blood coagulation 269
Brush border membrane protein 209

Cadmium 63, 77
Carbon clearance method 197
Carbon disulfide 51
Cardiovascular lesions 247
Cerebellum, changes in 101
Chromatin, liver 169
Chromium 47, 209
CO exposure 247
Copper 263

Covalent binding 159
Cytochrome P-450 1

Delta-aminoevulinic dehydratase (D-ALA-D) 67
Dichloroethylene 279
Differential leucocyte count 197
Dimercaprol (BAL) 241
2,3-Dimercapto-succinic acid 241
4-Dimethylaminophenol (DMAP) 39
Dimethylnitrosamine (DMN) 159, 169
DNA chain length 169
Dopamine, striatal 191
L-Dopa treatment 191

Electron microscopy 101, 155
Esophageal perforation 59
Exposure chamber 247, 279, 293

Fluoride, ammonium 209
Foetal brain 25
Formic acid 293

Gamma-glutamyltransferase (GGT), urinary 209
Glucuronides 39

Haemoperfusion 269
Halogenated ethylenes 279
Heart muscle necrosis 247
Heparin concentration 269
Hexachlorobenzene 233
Hexamethonium 217
Histology 25, 101, 155, 179, 247
Humans (volunteers) 39, 47
Humans (workers) 51

Intestinal excretion 233
Isolated liver 13
Isolated nuclei 169

Laboratory animals (normal mice and rats not mentioned)
  Rabbits 25
  Rats, adrenalectomized 113
  Rats, neonatal 257
LD_{50}-test 77
Lead exposure 67, 197, 257
Lead in brain regions 257
Leucocyte count 197
Lithium toxicity 135
Liver slices 159

Malignant tumours 145
Manganese intoxication 191
Mercapturic acid 39
Mercury 101, 113, 125, 209
Mercury, methyl 101, 113, 125
Metabolism 13, 39, 51, 159, 275
Metal metabolism (nutritional factors) 63
Methallothionein 125
Microsomes, liver 1, 13, 159

NAD(P)H-fluorescence, intracellular 217
Nephrotoxicity 209
Neurotoxicity 179
Nuclear lipid inclusions 155

Obidoximes 217
Occupational exposure
  Carbon disulfide 51
  Arsenic 145
Organophosphates 217
Otto engine 247

Perfusion, pendular 233
Pharmacokinetics, inhalation 279, 293
Phenobarbital pretreatment (induction) 13
Platinum, cis-diamminedichloro- 209
Poisoning, human
  Lye ingestion 59
  Arsenic 145, 241
Polybrominated biphenyl 155
Polychlorinated paraffins 1
Protein synthesis 113
Pyrethroids 71
Pyrimidine 5'-nucleotidase 67

Reticulo-endothelial system (RES) 197

Skin absorption 47
Sister chromatid exchanges 305
Sodium hydroxyde intoxication 59

TCDD 245
Teratology 25, 305
Testicular damage 179
Tetrathionate, sodium 209
Tin interactions 263

Vinyl fluoride 71, 279
Vinylidene chloride 279

Warburg flasks 159

Zinc 125, 263